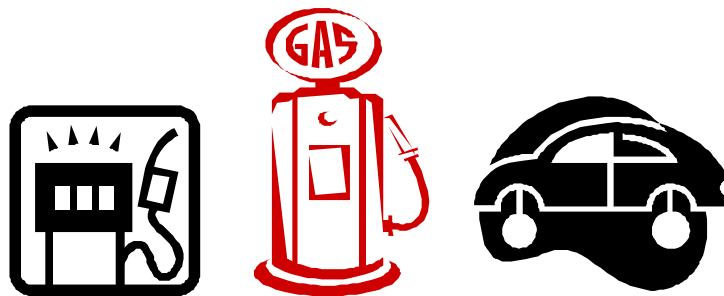


The New Hampshire Pollution Prevention Program



Pitstops Manual

Best Management Practices
For
Automobile Service Facilities



Sponsored by:
New Hampshire Department of Environmental Services





R-WMD-01-4

Pitstops

**Best Management Practices
For
Automobile Service Facilities**

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Table of Contents

A Reminder/What Is Pollution Prevention?.....	2
What is the NHDES One-Stop Program?.....	3
Introduction.....	4
<u>Hazardous Waste Identification</u>	5
Listed Wastes	5
Characteristic Wastes.....	6
Hazardous Waste Mixtures	7
Classifying Your Wastes	7
<u>Small Quantity Generators: Hazardous Waste Rules Summary</u>	7
What is a Small Quantity Generator	7
Core Waste Management Requirements.....	8
Extended Quantity and Storage Requirements	9
<u>Waste Streams & Waste Stream Reduction Recommendations</u>	10
<u>Solvent Waste Streams</u>	10
Absorbents/Shop Wipes.....	10
Carburetor Cleaners.....	12
Parts Washing Solvent Wastes.....	13
<u>Oil Waste Streams</u>	15
Used Oil	15
Used Oil Filters.....	17
<u>Painting Waste Streams</u>	18
Painting Wastes.....	18
Paint Booth Filters.....	23
<u>Aqueous Waste Streams</u>	23
Sumps and Floor Drains	24
<u>Other Waste Streams</u>	25
Aerosol Cans	25
Antifreeze	26
Asbestos Brake Pads.....	27
Batteries	28
Drums	29
Freon.....	31
Mercury Containing Lamps and Devices	32
Scrap Metal.....	32
Underground Storage Tanks.....	33

Used Tires.....	33
Appendix A: NH Resources for Information & Assistance.....	35

A Reminder

It is generally a poor idea to try to reduce complex regulations to a few paragraph's worth of simple overview. The information provided in this document is intended to give only a very basic idea of the rules, regulations, and management options which must be considered by automotive service facility owners and managers in order to be in compliance with applicable state and federal regulations. While every attempt has been made to make this document accurate and comprehensive, the fact remains that its format requires information to be excluded and simplified. We strongly urge you to contact the appropriate program to provide copies of the actual rules and regulations referred to in this document to insure that you are in compliance.

An "official" hard copy of all NHDES-related rules may be obtained from the NHDES Public Information and Permitting Office at (603) 271-2975 or by visiting <http://www.des.state.nh.us>.

What is Pollution Prevention?

Pollution Prevention (P2) means the use of materials, processes, or practices that reduce or eliminate the creation of pollutants or wastes at the source, or minimize their release into the environment prior to recycling, treatment, or disposal. Stated more simply, P2 avoids or minimizes generation of waste from the start. P2 also avoids the transfer of pollutants or wastes from one medium (such as air, water or land) to another.

The benefits of Pollution Prevention are many. They include but are not limited to:

- Lowered waste management and disposal costs
- Reduced operating costs
- Reduced regulatory burden
- Improved production efficiency
- Reduced chemical purchases
- Enhanced company image
- Lower liability risks
- Healthier work place

What is the NHDES One Stop Program?

With financial and technical assistance from the U.S. Environmental Protection Agency, the New Hampshire Department of Environmental Services (DES) has embarked on a three-year effort focused on more effective and efficient information collection, use, and dissemination. The One Stop Program is a key ingredient to the successful implementation of the Department's overall Strategic Information Management Plan for 1999-2003.

The broad goals of the DES Information Management Plan are (1) improving DES's effectiveness through better use and analysis of existing information, (2) improving measurement of environmental conditions and program performance, (3) improving public access to environmental information, (4) improving the management, coordination and measurement of DES programs, and (5) reducing the reporting burden on the regulated community. The One Stop Program will work to accomplish these broad goals in four specific ways:

- Database integration-Particularly where multiple programs have data on the same facility or site;
- GIS connection-Linking the databases to Geographic Information System (GIS) technology to show relationships between environmental features and regulated facilities/sites;
- Internet access-Establish GIS on the Internet as the "gateway" for access to comprehensive site specific and environmental resource information; and
- Common facility id- Develop and implement a unique identification system for sharing information across programs regulating common facilities/sites.

DES has already made significant progress with improved information management, and in recent years has invested substantially in developing the hardware, software, and systems to support continues improvement. For example, the DES website now hosts real time-specific permit information for certain programs, and two PC's in the lobby at Hazen Drive provide public access to GIS data for contaminated sites.

Automotive shops can use the One-Stop Program to see if their used oil burners and above or underground storage tanks are registered, to check manifests, or to check their Waste ID number.

Introduction

As a small automotive business owner just trying to make a living, you may wonder why so many regulations affect you. The answer is that there are more small businesses in the United States than large businesses, and collectively the sum of the pollutants generated by small businesses has exceeded the pollutants generated by large businesses. In order to maintain a healthy environment, it has become essential to reduce and regulate the pollutants generated by small businesses. The New Hampshire Department of Environmental Services (NHDES) wants to help you understand and comply with NH environmental rules and regulations.

Environmental regulations are necessary to control the amount of pollution released to the environment and to ensure a clean, healthy world for everyone, now and in the future. However, realize environmental regulations must be implemented in a manner that will protect the environment yet not be an undue financial burden on small businesses. The Environmental Protection Agency (EPA), New Hampshire Department of Environmental Services (NHDES) and the Small Business Technical Assistance Program (STAP) are attempting to strike a balance between protecting the environment and ensuring your business remains profitable.

The key to success at your level is getting your employees involved. It is essential that you and your employees become familiar with the environmental requirements affecting your business and take action to remain in compliance. Special emphasis should be placed on employee awareness and seeking to **reduce or eliminate pollutants** from your operations. By becoming more efficient in your usage of raw material, you will reduce the amount of money needlessly being spent to purchase products and dispose of wastes.

Environmental regulations have historically been viewed as a costly intrusion in business operations. Although this may have been true in the past, a proper understanding of the current regulations and accessing the assistance available to you can result in less government intrusion in your business and an increase in the likelihood of economic success. The New Hampshire Department of Environmental Services has long realized that effective environmental health can only be achieved through a partnership with the business subject to regulations.

HAZARDOUS WASTE IDENTIFICATION



The first responsibility for a potential hazardous waste generator is to identify all hazardous wastes and determine how they must be managed under the law. Hazardous wastes pose threats to both humans and the environment.

To determine if a waste is hazardous, a waste must:

1. appear on any one of the EPA's or New Hampshire's hazardous waste lists*;
2. exhibit a hazardous waste characteristic defined in the hazardous waste rules; or,
3. meet the definition of a hazardous waste mixture.

In New Hampshire, hazardous waste management is implemented through RSA 147-A and the New Hampshire Hazardous Waste Rules, codified as Env-Wm 100-1000 ("The Rules"). The Rules provide criteria for determining whether a waste is hazardous and procedures and reporting requirements for generators. The Rules also establish permitting for hazardous waste treatment, storage, and disposal facilities. These rules provide important guidance that when properly followed, help businesses maintain environmental compliance and help keep New Hampshire's environment safe and clean. A full set of these rules can be obtained by calling (603) 271-2975 or by visiting <http://www.des.state.nh.us>.

This section explains each of these criteria and provides guidance on how to make hazardous waste determinations.

LISTED WASTES

Each hazardous waste on one of the EPA's or NH hazardous waste lists is assigned a number that precedes the name of the waste. This number shall be used in complying with the notification requirements and certain record keeping and reporting requirements of the hazardous waste rules. Any waste that appears on these lists is hazardous and has a designated waste number. One list includes specific chemical compounds when they are discarded commercial chemical products, off-specification materials, or are contained in spill cleanup residues resulting from any release of these products. The wastes in these lists are categorized as "Acutely Hazardous Wastes" and "Toxic Hazardous Wastes" (commonly referred to as the "P" and "U" lists, respectively. These letters correspond to the first letter contained in the wastes numbers assigned to each waste.) **Automotive service facilities would most likely generate such wastes if they had a chemical solvent product which became off-specification and no longer useable, or spill residues from accidental spillage of unused degreasing or paint solvents.**

Another list includes generic process wastes, and is commonly referred to as the "F" list. **This list includes several wastes which may be generated at automotive service facilities, including spent chlorinated solvents used in degreasing, and spent solvents commonly used in paint formulations and as thinners.** An additional list includes wastes from specific industrial processes and does not contain any wastes typically generated at automotive service facilities. It is commonly referred to as the "K" list.

In addition, there are several wastes considered hazardous in New Hampshire with "NH" codes. These include paint related wastes such as paint sludges and paint filters. **Autobody shops would likely generate wastes in this category.** One such list is commonly referred to as the "D" list.

*Both EPA's and New Hampshire's hazardous waste lists can be found in the NHDES Hazardous Waste Rules, which can be obtained by calling the NHDES Public Information Center at (603) 271-2975 or by visiting <http://www.des.state.nh.us>.

CHARACTERISTIC WASTES

A waste is classified as hazardous waste if it exhibits any one of four "hazardous characteristics." They are:

<u>IGNITABILITY</u>	A waste with a flash point ≤ 140 degrees F. is an ignitable hazardous waste number D001. This category also includes wastes defined as oxidizers by the U.S. Dept. of Transportation. Examples from the automotive service industry include some parts cleaners, paint solvents, and gasoline.
<u>CORROSIVITY</u>	A waste exhibiting a pH ≤ 2.0 or ≥ 12.5 is a corrosive hazardous waste. Examples from the automotive service industry include battery acid and caustic parts degreaser (sodium hydroxide solution, a base).
<u>TC TOXICITY</u>	Wastes which contain certain levels of toxic metals such as lead and chromium, or compounds such as benzene and trichloroethylene are classified as TC toxic wastes. The complete list can be found in the USEPA Technical Bulletin No. 93-2, " <i>Understanding the EPA's New Toxicity Characteristic (TC) Rule</i> " or by visiting www.co.broward.fl.us/ppi02200.htm .
<u>REACTIVITY</u>	Wastes that are unstable, react violently with water or air, give off toxic fumes or are capable of detonation or explosive reaction are classified as reactive wastes.

The NHDES Environmental Fact-Sheet WMD-HW-11, "Identification of Hazardous Waste" can be

obtained by calling (603) 271-2975 or by visiting <http://www.des.state.nh.us/factsheets/hw/hw-11.htm>.

HAZARDOUS WASTE MIXTURES

The following waste mixtures are classified as hazardous wastes:

- Wastes or materials mixed with any of the listed wastes

CLASSIFYING YOUR WASTES

Many Material Safety Data Sheets (MSDSs) will list hazardous constituents and the characteristic properties of the material. Just because an MSDS shows the raw material has a characteristic of a hazardous waste (e.g., a flash point ≤ 140 degrees F), the waste from the process that uses that material will not necessarily exhibit the characteristic. The process may have altered it in some way. Conversely, materials that do not display the hazardous characteristic will not necessarily produce a waste that is not characteristic. You must combine your knowledge of the materials and the process to determine if the wastes are characteristic or listed. Take, for example, parts washers. The solvent doing the washing may not be hazardous, but the material being washed off the parts may make it so (e.g., heavy metals).

With most materials, the hazardous constituents or characteristics will be fairly easy to identify. Other times, it is not so clear. You can obtain assistance from the NH DES Hazardous Waste Assistance Hotline at (603) 271-2942, from disposal vendors, or from the EPA RCRA Hotline (800 424-9346). At times, it will be necessary to obtain a laboratory analysis of the waste to determine if it exhibits one of the four characteristics, or contains hazardous constituents at sufficient concentrations to classify the waste as hazardous.

SMALL QUANTITY GENERATORS ***HAZARDOUS WASTE RULES SUMMARY***

What is a Small Quantity Generator?

As per New Hampshire Hazardous Waste Rules (Env-Wm 503.01), a Small Quantity Generator (SQG) is any generator who, in each and every month, generates less than:

1. 100 kg (220 lbs.) of total hazardous wastes
2. 1 kg (2.2 lbs.) of an acutely hazardous waste
3. 100 kg (220 lbs.) of any materials resulting from a spill of an acutely hazardous waste

Many automotive service facilities qualify as small quantity generators. SQGs who **never accumulate greater than 100 kg (220 pounds) on site at any one time** are subject to only the core

management requirements outlined below.

Core Waste Management Requirements

- 1 . Determine the type and amount of hazardous waste generated and keep records documenting the basis of this determination (generator's knowledge, analysis, etc.) **Used oil destined for recycling (such as burning for energy recovery) is not included in calculating the quantity of hazardous waste generated.**
2. Notify DES of your hazardous waste management activities and obtain an EPA Identification number. Contact the Reporting Information Management Section of DES at (603) 271-2900.
3. Storage Requirements:
 - Use U.S. DOT approved containers which are compatible with the wastes;
 - Keep containers closed except when adding or removing waste;
 - Store wastes on impervious surfaces such as concrete or asphalt. Don't store near floor drains, sink drains, or manholes without secondary containment, and not within 50 feet of surface waters;
 - If wastes are stored outside, make sure they are covered by a structure, tarp, or drum covers;
 - Maintain spill control equipment such as speedi-dry or absorbent pads;
 - Provide fire control equipment, such as a fire extinguisher, and "No Smoking" signs near ignitable wastes; and
 - Maintain a minimum of 2 feet of aisle space adjacent to storage containers to allow for response to spills or fires.
4. Labeling Requirements:

Mark or label hazardous waste containers at the time they are first used to store wastes with the following information:

- The beginning accumulation date;
- The words "Hazardous Waste";
- Words that identify the contents of the container (ie. "waste paint thinner"); and
- The EPA or state waste number (ie. "F003").

When offering the containers for transportation, mark the container with the following information:

- Generator's name and address
- Manifest document number (This is a unique number assigned to each manifest.

Transporters often supply the manifest, and can assist you in properly completing it.)

- The following statement:

HAZARDOUS WASTE- Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Preprinted labels are available from suppliers which contain this statement and provide spaces for writing the additional required information.

5. Use NH permitted hazardous waste transporters and authorized treatment, storage, and disposal facilities to dispose of the waste. If requested, they should be able to show you their permits and be able to track your waste to its final destination. Contact the DES Special Investigation Section at (603) 271-3899 or by visiting <http://www.des.state.nh.us/sis>.
6. Use an 8-part prenumbered EPA/DOT uniform hazardous waste manifest (EPA Form 8700-22) to document shipment of your wastes. This document, available from DES or from transporters, is used to track hazardous wastes from "cradle to grave". It also contains information about the wastes to be used by the transporter and emergency personnel in case of an emergency. Keep your copies on file for at least seven years after shipment.

Extended Quantity and Storage Requirements

For most liquids, 220 pounds amounts to a volume of only about 25 gallons. Since 55-gallon drums are generally less expensive to transport and dispose of than several five-gallon containers, many SQGs desire to accumulate greater than 220 pounds of waste in order to minimize shipping and disposal costs. In response to this concern, DES developed the "Extended Quantity and Storage Provision" in its rules for SQGs. This provision allows SQGs to accumulate hazardous wastes in appropriate quantities for economical and safe transportation and disposal, without requiring compliance with all of the requirements applicable to full quantity generators. The requirements of this provision are summarized below.

1. SQGs may accumulate 1000 kgs. of hazardous waste (this amounts to about five drums, and assumes that you have more than one type of waste), while maintaining status as a SQG.
2. Observe proper container management practices, including inspecting storage areas at least weekly, looking for leaks and/or deterioration of containers;
3. Once the 1000 kg. limit is met, SQGs have 90 days to get the waste shipped off site.

***Note: The current Rules do not require that a date be placed on containers when the 1000 kg. limit is reached. However, future versions of the Rules may require this, and it is advised that generators keep abreast of the latest Rule revisions, or date the containers to ensure future compliance.**

4. Meet the following waste management and emergency planning requirements:
 - Designate at least one employee as the emergency coordinator. This person should be either on the premises or on call, and capable of coordinating response measures in the event of an emergency.
 - Post the following information at the telephone nearest the storage area:
 - the emergency coordinator's name and phone number.
 - the location of fire extinguisher, spill control material and fire alarm (if present).
 - the phone numbers for fire, police, hospital, and state emergency response;
 - Ensure employees are familiar with proper waste handling and emergency procedures; and
 - Have internal facility communications or an alarm capable of providing emergency instruction (voice or signal) to all employees.
 - Ensure that fire extinguishers are present, and inspected within the year.

Waste Streams & Waste Stream Reduction Recommendations

There are different types of waste streams generated in the automotive repair industry. Waste streams may be generated from cleaning up the shop area, painting, or cleaning parts to do repair work. Waste streams may also be generated during scheduled and nonscheduled maintenance and repair. Scheduled maintenance includes changing engine oil, oil filters, transmissions fluids and radiator fluids while nonscheduled maintenance includes replacing batteries, brakes, shocks and tires.

Solvent Waste Streams

Solvents, which are usually highly volatile and flammable, include alcohols, esters, ethers, ketones, amines, and aromatic and halogenated hydrocarbons. The 1984 RCRA amendments specified 5 categories of solvent waste (F001 to F005) to be banned from land disposal. In November 1986, these amendments went into effect. Since solvent waste can no longer be disposed of at landfills, it has become necessary to either reduce the amount of solvent waste being generated, recycle the waste, or treat the waste through methods such as incineration.

In the automotive repair industry, solvent wastes are generated from parts cleaning operations and carburetor cleaners. If paint or paint waste contains solvents, it would be regulated as a hazardous waste.

Absorbents/Shopwipes

Oil spills and other chemical leaks commonly occur in vehicle maintenance facilities. Absorbent materials that absorb through capillary action can contain and absorb oil spills quickly and safely. Traditionally, absorbents can be pads, blankets, pillows, or particulates. They can be used for minor

spills or final clean-up sweeps for thin slicks. Similarly, they can be cut into various sizes, or spread over a spill and retrieved by a vacuum, depending on the type of absorbant.

Absorbents may be made of various materials, including sand, clay, and paper. Absorbents have also been developed from corn cobs and peat moss. Absorbents that have been soaked with used oil are regulated under Env-Wm 401.03(b)(21).

Reduction Recommendations:

- Minimize the use of wipes for clean-up by avoiding spills.
- Choose reusable wipers in preference to incineration or landfilling the used contaminated wipes.
- Select absorbents that are wringable and can be reused more than once to reduce raw materials, disposal costs, and clean up time. Some absorbents have been used as much as 17 times.
- Consider purchasing absorbents such as specially formulated corncob or cellulose products which may be burned for energy recovery.
- Designate an area for storing rags that are to be laundered. The rags should be stored in a metal container with a tight-fitting lid. Make sure the rags do not contain free liquid solvents. Before storing, rags should be wrung dry with a small wringer. This practice will ensure that most waste solvent in the rags is recovered.
- To help keep track of rags, install an inventory control system where service persons must return rags before receiving rags.
- Consider a laundry service.

Best Management Practices:

- Use non-hazardous cleaning solvents whenever possible.
- Use cloth or other durable material shop towel.
- Wring out soiled towels before placing in collection drums, use centrifuge or mechanical wringer, if possible.

- Make sure no saturated or dripping towels are placed in drums.
- Make sure liner system (nylon or mesh bag) is in good working order and hangs at correct height.
- If excess liquid collects at bottom of drum, decant into waste solvent collection drum; manage the liquid appropriately.
- If collected liquid meets RCRA criteria (listed, characteristic, etc.) manage as a hazardous solvent waste.
- Always collect, store, and transport in closed containers in accordance with local fire department standards.

Rags contaminated with solvents or other substances that may be RCRA hazardous are not considered hazardous waste if they are laundered by a commercial service and are managed in accordance. They are hazardous wastes if they are disposed. Contaminated rags must be stored in properly labeled, lidded or sealed containers and stored away from sources of ignition.

The NHDES Fact-Sheet WMD-HW-6, “*Contaminated Cloth Wipers for Laundering*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/hw/hw-6.htm.

Do Not:

- Air dry soiled shop towels.
- Pick up spills of hazardous liquids with towels.
- Dispose of excess chemicals by pouring onto towels.
- Put towels with free liquids in collection system.
- Allow towels in drum to contact excess liquid (liner should always hang high enough to prevent this).
- Rewash or launder shop towels on your own or at your home.

Carburetor Cleaners

Carburetor cleaners contain chlorinated compounds. Carburetor cleaner compounds have been reformulated to exclude the use of 1,1,1, trichloroethane which is a skin irritant. There are companies that have developed substitutes for hazardous carburetor cleaners.

There are four main solvent mixtures used as carburetor cleaners. They are:

<u>Solvent Compound</u>	<u>Hazardous Waste Category</u>
methylene chloride and phenol	D002, F001
petroleum distillates and phenol	D001, D002
methylene chloride and cresol	F001, F004
methylene chloride	F001

Most solvents currently being used as carburetor cleaners are regulated as hazardous waste. Some are regulated because of ignitability and others are "F listed" due to toxicity. These wastes may be incinerated or reclaimed by a Treatment Storage and Disposal Facility (TSDF).

Reduction Recommendations:

- Determine if non-hazardous carburetor cleaners can be used as opposed to traditional ones.
- Carburetor cleaner should be segregated from other wastes.
- Use sparingly, and don't use spray (VOC's).
- Save and add to heavy parts cleaner.
- Distill with other solvents.

Parts Washing Solvent Wastes

Solvent parts washers are used to clean parts that are needed for repair work. They operate by continuously recirculating the solvent from the solvent drum to the solvent wash tray. The solvent in a parts washer is usually replaced with fresh solvent when the solvent becomes too dirty to provide adequate cleaning.

Solvent parts washers produce solvent wastes that are subject to RCRA reporting, minimization, and disposal requirements. The D001, F001 - F005 solvent wastes, and TCLP listed wastes are generated from parts washing and paint gun clean-up operations.

Because petroleum distillates, mineral spirits, and naphtha have flashpoints less than 140 degrees F, these wastes are hazardous and must be D001 manifested.

Reduction Recommendation:

- **More Efficient Use**
- **Alternative Cleaning**
- **Distillation**

More Efficient Use of parts washing can help eliminate some of the solvent wastes. These are simple, inexpensive procedures which minimize your use of solvents and increase the life span of solvents resulting in reduced waste generation. Some of these procedures are:

- Before using a solvent for cleaning, try to remove heavy grime manually so as to reduce the amount of solvent needed.
- Reuse the same solvent as much as possible. Solvent used from a final cleaning that is not too contaminated may be used for "dirtier" parts.
- Allow dirty solvent to settle for a while. Often times heavier contaminants will settle to the bottom allowing "cleaner" solvent to be carefully poured off for reuse.

Do not locate parts washer stations near exhaust fans and door drafts. Pumps that are continuously running volatilizes the product into the air. Make sure parts washers are off when not in use. If the parts washers have lids, keep lids closed when not in use.

Look for **alternative cleaning** methods. There are numerous technologies in varying stages of development to replace hazardous solvents. These include:

- "Non-hazardous" solvents. These are generally petroleum based products formulated so as to have a flash point just above 140 degrees allowing them to "fall out" of the hazardous category.
- Semi-aqueous cleaners such as citrus-based (turpene) cleaners.
- Aqueous cleaners such as detergents, caustics and saponifiers.
- High pressure hot water and steam cleaning.
- Mechanical blasting including baking soda and frozen carbon dioxide.

Aqueous washers are commonly being used to replace solvent degreasers. These are essentially commercial dishwashers which have been designed for parts cleaning. Aqueous washers may use a variety or combination of cleaning agents in combination with cleaning enhancers such as ultrasonic agitation.

Many waste solvents can be recycled with a **distillation** unit. A distillation unit employs a separation technique that relies on boiling point differences of the components of the waste. There are small distillation units available which could permit reuse of solvents.

Best Management Practices:

- Never mix or add spent or fresh solvents to used oil.
- Never use gasoline as a cleaner or solvent.
- Use solvents properly. Solvents should never be used for the general cleaning of shop floors and should only be used in a well-maintained self-contaminated cleaning system.
- Use solvents as little as possible to minimize the generation of hazardous waste. Operators should only clean parts that need to be cleaned. Careful conservation of solvents could reduce the purchase of new solvent.
- If using a chlorinated solvent, consider switching to a less toxic solvent such as citrus product or an aqueous detergent.
- Never dispose of solvents into drains, the ground, or the air. Disposal by evaporation violates the New Hampshire Hazardous Waste Rules.
- Consider a two-stop, precleaning/final cleaning system.
- Always keep lids of cleaning tanks tightly closed and away from heat and drafts when not in use to help minimize product loss and keep emissions into the air at a minimum.
- Consider the use of a solvent supplier who will pick up and recycle the solvents.



Oil Waste Streams

Oil wastes may include used oil, used oil filters, and absorbents. Oil and used oil may be contained in underground storage tanks. The State of New Hampshire regulates disposal of used oil filters as well as registration of underground storage tanks.

Used Oil

Generally, used motor oil contains additives and metals such as lead, zinc, arsenic, and cadmium. Used motor oil may have high concentrations of chromium resulting from wear of metal parts in the engine, and can also be contaminated by fuel, water, antifreeze, and chlorinated solvents.

Although used oil is a listed hazardous waste in NH, it is subject to less stringent requirements if it is sent for recycling, by being burned for energy recovery or being re-refined. Otherwise, it must be

managed as a hazardous waste. Recycled used oil is regulated under the NH Hazardous Waste Rules, Env-Wm 807, and the NH Solid Waste Rules, Env-Wm 2605. There are three options for managing used oil which is destined for recycling:

- Work with a marketer who may provide the used oil to end users. If a marketer transports your oil to a waste oil burner, asphalt plant, or industrial boiler, and that used oil is burned to recover energy, recycling requirements have been satisfied. Under this scenario, the generator of the waste oil would be subject to the used oil generator standards at Env-Wm 807.06.
- Provide used oil directly to an end user. Although a generator may give used oil directly to a burner, this option can increase liability, making it imperative to know who is transporting the used oil, and how and where the used oil is recycled. Additionally, either the generator or burner must test each batch of used oil; a financial consideration which is usually taken care of by established marketers. Under this scenario, the generator is subject to the used oil generator requirements of Env-Wm 807.06 and the marketer requirements of Env-Wm 807.09. The burner is subject to the burner requirements of Env-Wm 807.10.
- The oil may be burned on-site in a suitable space heater or waste oil burner. The used oil fuel burner shall notify DES of their used oil management activities using a form provided by the department (Env-Wm 807.10).

Disposal of any waste oil, or any liquid in a sanitary landfill is unlawful. Use of used oil as a dust suppressant is also prohibited.

NHDES grants up to \$2,500 per year to municipalities and some private facilities to establish, improve, or to operate used oil collection centers dedicated to Do-It-Yourself (DIY) oil changers. After receiving a grant, recipients send oil collection data to NHDES for 5 years. In addition, used oil activity that includes marketing, burning, and transportation (of over 110 gallons per load) requires the site to notify NHDES. More information may be obtained by visiting http://www.des.state.nh.us/hwcs/used_oil.htm.

Use Oil Regulations are included within the NHDES, Waste Management Division, Hazardous Waste Rules which can be accessed from www.des.state.nh.us/hwrb/hwrules.pdf. The Used Oil Regulations can be found under Chapter 800. Inquiries to the Hazardous Waste Compliance Section may call (603) 271-6424 or 1-888-TAKEOIL. Non-oil hazardous waste inquiries can be forwarded to the NHDES Hazardous Waste Hotline at (603) 271-2942, or by e-mailing hwcomp@des.state.nh.us. The NHDES “*Registration for Aboveground Bulk Storage Facilities*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/orcb/doclist/astreg.pdf.

Absorbents that have been soaked with used oil are regulated under Env-Wm 401.03(b)(21), which states that the following materials shall be exempt from regulation under the hazardous waste rules:

- Petroleum-contaminated media and debris that fail the test for the toxicity characteristic of hazardous waste codes D018-D043;
- Or are generated from releases of underground storage tanks,

Reduction Recommendations:

- Ask your oil recycler if lube oils can be reclaimed. There are companies that recycle lube oils on-site.
- On or off-site energy recovery of waste oil is recommended. It is important that the generator know how the waste oil is being managed and recycled to avoid liability and non-compliance problems.
- Seek companies that pay for the waste oil collected at the facilities as opposed to companies that charge to dispose.
- Do not mix wastes like antifreeze or brake fluid with the used oil. If a mixture of antifreeze and oil is accidentally generated, antifreeze should be separated from the oil waste.
- Prevent degreasing solvents (chlorinated hydrocarbons) from contaminating used oil. This practice may make the oil subject to regulation as a hazardous waste. When hazardous wastes are mixed with used oil, the oil is no longer subject to the recycling exclusion.
- Pour collected oil from drip pans into used oil containers. Store drip pans carefully to avoid spills.
- Place oil-laden parts on a drip pan and place drip pans under leaking vehicles to collect dripping oil.
- Burn used oil on site.

Best Management Practices:

- Use separate drip pans for different fluids.
- Purchase re-refined oil when possible.
- Using new longer-lasting synthetic oils may reduce the number of oil changes required in any given vehicle.
- To protect the environment, clean up used oil spills or leaks. Do not use used oil for dust suppression or weed killing around fence posts.
- Keep storage tanks and containers in good condition. Make sure that storage tanks are

labeled "used oil for recycling". Store used oil in areas with oil-impervious flooring.

- Store used oil in closed containers labeled "Used Oil" or "Used Oil for Recycle."
- Do not mix hazardous waste oil with used oil.
- Locate oil storage tanks or drums on an impermeable surface to contain leaks and spills.
- Regularly inspect all oil storage drums for leaks and spills.
- Clean spills using a cloth rag or mop that can be wrung-out and reused.
- Recycle used oil.

Used Oil Filters

Filters should be drained of free liquids prior to final disposal. This is best accomplished by tipping the filters at an angle to allow remaining oil to drain into a collection tray. Oil filters should be drained a minimum of 1 hour when warm. Punching holes in the top center of the filter has proven to improve drainage. Ideally, filters should drain 2-3 days so free-flowing oil can be recovered.

Oil filter presses crush the filter canisters and help facilitate oil removal. These presses can be purchased at a reasonable cost. With presses, approximately 85% of the remaining oil can be recovered.

Reduction Recommendations:

- Drain and crush used oil filters.
- Recycle used oil filters through a scrap yard or used oil filter recycler.
- Used oil filters represent a significant waste stream in New Hampshire resulting in the generation of about 1,750,000 filters in 1992. As per New Hampshire Rule Env-Wm 401.03, used oil filters are exempt from regulation under the hazardous waste rules "provided that the filter materials have been purged of used oil as completely as is practicable."
- To empty a filter properly, the filter should be hot drained, crushed, punctured at the anti-drain valve, or emptied in an equivalent fashion. Although gravity draining for over one hour is acceptable to meet this regulation, the State of New Hampshire strongly recommends crushing and recycling as the preferred method of disposal.

These regulations do not refer to lead plated (Terne) filters that are considered to be a hazardous waste regardless of draining.

Best Management Practices

- For a minimal fee, municipalities, or companies with large fleets of vehicles can get the oil in their vehicles tested at an auto body shop. Instead of changing their oil every 3,000 miles, they could change it when needed, preventing unnecessary used oil from entering the waste stream.

The NHDES Environmental Fact Sheet WMD-OIL-1 “*Used Oil Filters*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/oil/oil-1.htm.



Painting Wastes



Primarily, painting wastes result from overspray and paint gun cleaning operations. Waste paint thinner is generated when paint guns and other equipment are cleaned. Paint thinners may contain solvents such as xylene, methyl ethyl ketone, toluene, and acetone. Waste thinner is frequently collected and mixed in drums with waste paint. The drums are sent to a RCRA permitted solvent recycler or fuel blender.

Solvent-based waste paint is regulated as a hazardous waste if it demonstrates one of the characteristics of a hazardous waste (i.e., reactive, corrosive, toxic, ignitable). Some paints contain heavy metal compounds such as lead, cadmium and chromium and demonstrate the characteristic of toxicity. In all cases, waste paints with heavy metals and solvents must be managed as a hazardous waste.

Solvents used as paint thinners are considered hazardous due to toxicity and ignitability characteristics. Most of these solvents have EPA waste codes of F003, F005 and D001. Solvents that demonstrate the EPA hazardous waste characteristics are banned from landfill disposal or discharge to a POTW.

Solvent and still bottoms are a RCRA hazardous waste and must be properly stored, transported, and treated and/or disposed of by a TSDF.

New Federal Regulation for Automobile Refinish Coatings

As of January 11, 1999, the USEPA requires that all coatings manufactured in or imported into the United States for auto body refinishing meet specific limits on volatile organic compound (VOC) content. This new regulation affects all auto body shops in the United States that are not already

using low VOC coatings. All coatings manufactured after January 11, 1999 will have to meet the new VOC limits.

Since some states have required the lower VOC coatings for a number of years, initial problems with mixing and application have been resolved. However, spray technicians may need training on proper mixing and application techniques and low VOC coatings require High Volume Low Pressure (HVLP) spray guns; older guns cannot handle low VOC paints. Proper painting technique helps reduce coating use, overspray, and other problems that affect transfer efficiency, air quality, and paint job quality.

Mixing

- Closely follow the mixing instructions on the coating cans. The instructions specify the quantities of coating, reducer, and hardener required to meet “as applied” standards.
- Do not create your own mixtures. “Cocktailing” may result in inferior finishes that exceed the VOC standards.
- Consider using a coating mixing system to mix only the amount of coating that you need.

Reduction Recommendation:

There are several different ways that painting wastes can be reduced. The methods discussed below include improving operating procedures, utilizing different equipment and paints, investigating a more efficient inventory control, and reducing overspray.

Operating Procedures

- Allow solids to settle out of the solvent used for cleaning painting equipment. The clean solvent can be used for cleaning or for paint thinning. Then only the sludge will need disposal.
- Keep paint and paint thinner wastes separate. Thinners can be reclaimed and reused. Thinners should be used until their cleaning capabilities have been exhausted. Thinner used as gun cleaner should be saved and reused to thin the next batch of same color paint.
- Control paint quality to avoid defective batches. Do not mix more paint than is needed for a painting job. Batch paint jobs of the same color or type.

Equipment

- Consider the use of electrostatic spray guns or electrostatic paint technology. It may be possible to adapt your existing equipment to electrostatic use without changing any coating

formulations. It may also be possible to convert to powder coating technology which uses no solvents of any kind.

- Consider investing in a gun cleaner that recirculates the wash. Gun cleaners can save you as much as 30% on disposal and raw materials costs.
- Recycling of paint thinners and solvents such as xylene can be done on-site with a distillation unit or off-site through a solvent recycler. Distillation units used to reclaim solvents can also be used to recycle paint thinners. Distillation units have been shown to significantly reduce waste generation and disposal costs.
- Use heaters to reduce paint viscosity instead of adding thinners.

Paints

- Buy only the paint you need. That way, you reduce the chance of having paint leftover in the first place. When you avoid creating waste this way, you're practicing "source reduction."
- Store paint so it lasts. Paint can last for years. If you cover the opening with plastic wrap and tightly replace the lid. Make sure the lid fits securely so the paint doesn't leak. Then, store the paint upside down. The paint will create a tight seal around the lid, keeping the paint fresh until you need it again. Also, make sure you store the paint where it won't freeze over the winter.
- Use up all your paint. Leftover paint can be used on touch-up jobs and smaller projects. You can also blend and mix smaller quantities of similar colors of latex paint to use on larger jobs, or as a primer for jobs where the final finish is not critical. Always make sure you read and follow all label instructions when applying paint.
- Donate or exchange your paint. If you can't use leftover paint, donate it to community groups, schools, churches, and others who can use it. You may even be able to take a tax deduction. Another good way to get rid of your unwanted leftover paint is to participate in and/or organize a neighbor-to-neighbor or community-wide paint exchange/paint swap. Call your community to see if they maintain a paint swap shop or if they'll organize a paint swap with their next household hazardous waste collection event.
- Recycle your paint. Some communities collect paint for recycling. You should also think about buying recycled paint to help increase the demand for recycled paint.
- The next time you need paint, ask your paint dealer about it. Recycled paint can be just as good as new.
- As a last resort, dispose of your paint properly. Air dry leftover latex-based paint and discard it in your trash. Make sure you do this away from children and pets. One method is to pour

the latex paint onto a sheet of plastic and let it dry. Then you can roll it up and toss it out with your regular trash.

Solvent Based Paint

- Liquid solvent-based paint should not be discarded with the normal trash. Instead, save it for a special paint collection program or a household hazardous waste program in your community. Contact NHDES or your town office for details.
- Air drying liquid solvent-based paint is generally not recommended, but if the paint has already solidified in a closed can, you can dispose of it in your regular trash.
- Investigate the possibility of replacing solvent-based paints with water-based paints to eliminate the use of solvents and thinners as cleaners. Using paints without metal pigments or paints with a high solid and low volatile organic compound content will also help reduce waste.
- Consider the use of powder based paints. Although this requires the purchase of new equipment, powder coatings offer a superior coating while completely eliminating the need for solvents.

Inventory Control

- Controlling inventory is important when trying to reduce waste. It helps to eliminate excess supplies which minimizes waste to be discarded. Three procedures that can help control inventory are:
 1. Purchasing paints only in quantities needed to avoid discard.
Adopting first-in, first-out inventory practices to reduce wastes associated with expired shelf life.
 2. Purchase only when needed- “Just in Time” purchasing.
 3. Try to reduce the number of colors used and purchased.

Overspray Reduction

- Use equipment with low overspray. High volume low pressure (HVLP) and air assisted airless guns to provide the high transfer efficiencies.
- Clean spray gun nozzles regularly. Be sure to clean needle valve well.
- Replace damaged nozzles.

- Keep spray gun perpendicular to the surface.
- Maintain a **fifty** percent overlap of spray pattern.

Prep Coats

- Use versatile products such as epoxy primers or self-etching primers. These may alleviate the need for additional surface coating operations such as primer-surfacing or primer-sealing.
- Use a wash primer or metal conditioner conversion coating system.

Primer-Surfaces

- Use a properly operating primer gun with the correct fluid tip/air cap combination for your particular type of primer-surface.
- If the curing time of waterborne products is unsatisfactory, consider using combination for your particular type of primer-surface.
- To reduce VOC emissions, limit material costs and achieve a better quality product, perform body work using a minimal amount of primer-surfacer.
- If a clear sealer is to be used, make sure the primer-surfacer is a color that can easily be covered with the desired topcoats.

Primer-Sealers

- Use low VOC urethane primer-sealers as an alternative when possible.

Sealers

- Choose a sealer appropriate for each specific job.
- If filling capabilities are required, use a primer-sealer in place of a sealer.

Topcoats

- Mix color coats in-house, making sure the formula for the proper shade of the specific color code is used. This will help avoid the need for blending the finish to achieve a satisfactory color match.
- Keep good records of paint match information, including spray-out cards and detailed notes.

- Avoid the issue of laquer-based topcoats.
- Choose low VOC topcoats that require fewer than three coats to achieve adequate coverage (polyurethane or urethane).
- Apply only the number of coats needed to achieve a quality finish.
- Use high solids/low VOC clears to topcoat color coats.
- Keep the addition of paint additives to a minimum.
- When available use waterborne basecoats.

The NHDES Environmental Fact Sheet WMD-HW-14, “*Pollution Prevention Tips for Paint*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/hw/hw-14.htm. The brochure titled “*Low VOC Paints*” is also available.

Paint Booth Filters

Vehicle maintenance facilities also generate paint booth exhaust filter wastes. The filters are paper-based or fiber material that require changing, which is dependent on the amount of painting being done. They collect oversprayed paint from the paint booth area.

As of 2/26/00, paint filter waste is no longer a listed NH waste as NH 53 and was removed from the NH Hazardous Waste Rules. However, paint filters that may contain hazardous constituents are still subject to TCLP. It is possible for some filters, such as those heavily saturated with solvent based paint, to exceed TCLP levels.

Reduction Recommendation:

- If possible, consider the installation of reusable filters. These filters use a solid or liquid medium which allows for their separation and reuse.
- Use a drum compactor to place as many filters as possible into the drum when disposing.
- Filters must be completely dry to avoid ignition.

Aqueous Waste Streams

Aqueous cleaning methods are a substitute for parts cleaning operations that use solvents. The aqueous methods use water, detergents, acids, and alkaline compounds to displace soil. Aqueous wastes are water-based detergent wastes and waste sump solids. They are generally considered hazardous because they contain caustics, high levels of metals, and oily dirt.

Sumps and Floor Drains

Sumps and floor drains are found throughout many vehicle-maintenance repair shops. Collection sumps are designed to store wastewater that results from cleaning and shop floor spills. The sumps may collect grit, dirt, grease, oil, soap, water, and solvents. These contents are subject to hazardous waste determination (TCLP test) prior to disposal.

The nature of the sludge will determine the disposal method. Sludge samples should be TCLP tested., and if it passes a TCLP test and does not contain any other characteristic or listed wastes, then it may be disposed as a nonhazardous waste.

DES prohibits floor drains in auto service stations unless:

1. The floor drain is connected to a municipal sanitary sewer in accordance with federal, state and local regulations;
2. The floor drain is connected to an alarmed, underground holding tank which meets DES requirements and is registered with DES; or,
3. The floor drain is connected to an above ground holding tank which meets all federal, state and local requirements.

If you cannot or choose not to connect your floor drain in one of these methods, then the floor drain must be permanently closed. This should be performed under the direction of a consultant who is familiar with the proper closure procedures or, if you are positive that no contaminants were ever released into the floor drains, you may seal the drain by filling it with concrete.

Reduction Recommendations:

- The sludge from sumps and floor drains must be TCLP tested for hazardous waste determination as metals and solvents are frequently present in these collection systems. Also, POTWs may have oil and grease discharge limits. Water may be discharged after oil and grease are removed.
- Consider using oil/water separators or skimmers to remove free-floating oils and grease. Implementation of this recommendation may allow wastewater to be discharged to POTWs. Oil and grease must be disposed by TSDFs if they fail the TCLP test.
- Use drip pans to contain drips when changing fluids or working on damaged vehicles. It is extremely important to keep solvents and cleaners out of drip pans to avoid creating hazardous waste through the mixture rule. Oils and fluids from these vehicles may contribute to sump contamination as well.

The NHDES Environmental Fact-Sheet WD-WSEB 22-9, “*Protecting Groundwater from Floor Drains and Other Typical Discharges*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/ws/ws-22.9.htm.

Best Management Practices:

- Prevent spills by properly maintaining equipment.
- Clean up any spills using absorbants.
- When cleaning bays use a non-toxic, biodegradable soap.
- Keep oil/water separators maintained at all times.

Other Waste Streams

There are many other waste streams generated at auto repair facilities. With a few exceptions, the remaining waste streams are generated through nonscheduled maintenance/repair of vehicles.



Aerosol Cans

Aerosol cans offer the automotive industry a wide variety of products in a very convenient package. Brake cleaners and carburetor cleaners are typically sold in aerosol cans.

Currently, many landfill authorities are limiting or rejecting aerosol cans they accept due to their explosion hazard or contamination hazard. Aerosol cans must be completely empty for disposal. Some scrap metal dealers will accept empty aerosol cans.

Reduction Recommendations:

- Don't use aerosols. Hand apply paint or degreaser with a brush to eliminate aerosol fumes and spent cans.
- Replace disposable aerosol cans for degreasing or lubrication by using refillable spray containers, or portable parts wash units equipped with basins to catch overspray.
- To increase the shelf-life of aerosol cans, keep them away from moisture, sunlight, and extreme heat and cold. It is also important to keep the protective caps on the containers when not in use. This helps prevent contamination, rusting of the container top, and nozzle damage.

- An inventory control system can assist in reducing waste. Order products according to demand because expired shelf life may require excess inventories to be disposed. Dispense aerosol cans through one person in one location to prevent unnecessary usage.
- Purchase alternative brake and carburetor cleaners that do not contain CFCs .

Best Management Practices:

- Use all of the material in the can.
- Recycle empty cans or dispose of in a landfill.
- Defective cans that still contain hazardous material should be returned to the manufacturer or disposed of as a hazardous waste.

Antifreeze

Antifreeze is used as an engine coolant and commonly consists of ethylene glycol or propylene glycol. Antifreeze breaks down over time and forms acids which corrode a vehicle's cooling system. During its use, antifreeze may become contaminated with fuel components such as benzene, lead, grit, and other hazardous constituents that may cause used automotive antifreeze to be characterized as a hazardous waste.

All wastes, including waste antifreeze, must be evaluated to determine if they are hazardous wastes and, if so, managed in accordance with the equipment of the NH Hazardous Waste Rules. These requirements may include use of a hazardous waste manifest, and delivery by a licensed hazardous waste hauler to an authorized hazardous waste facility.

Alternatively, waste antifreeze may be handled under the New Hampshire Department of Environmental Services' (DES) universal waste policy, adopted October 14, 1998. This policy eliminates burdensome regulatory requirements and promotes the recycling and proper management of waste antifreeze. For more information on Universal Wastes and their handling requirements call Paul Lockwood at (603) 271-2956.

Reduction Recommendations:

- Minimize the amount of waste antifreeze by replacing it only when necessary. Visually check antifreeze for contaminants and test for freeze point and pH. Fresh ethylene glycol or corrosion inhibitors can be added to adjust these parameters without disposing of the antifreeze.
- If good antifreeze needs to be removed for repairs only, save it in a clean container and reuse it in the system after repairs are completed.

- Used antifreeze can often be recycled in-house by removing contaminants and rebalancing the antifreeze formulation. Consider investing in a recycling system that removes particulates and colloidal silica (both are harmful to the coolant system) and provides an additive package to restore anticorrosion properties to the coolant. Other options are to hire a contractor to come in with a mobile recycling unit, or ship the antifreeze to a recycling facility.
- The used filters from antifreeze recycling equipment are potentially hazardous due to the concentration of contaminants. If on-site antifreeze recycling equipment is used, the filters should be TCLP tested.
- Under the universal waste policy, hazardous waste generators are not required to include waste antifreeze in the calculation of a hazardous waste generator's status if the waste antifreeze is being recycled. Universal wastes, when recycled, are also not subject to the generator fee. Handlers are not required to use a licensed hazardous waste hauler to transport universal waste and are not required to complete a hazardous waste manifest.
- Determine if on or off-site antifreeze recycling will best serve your needs.

Best Management Practices:

- Wear protective clothing when flushing coolant.
- Store the spent coolant in containers which are labeled with the words "hazardous waste", the contents of the container, the EPA waste code, and the date of accumulation.
- Keep containers closed and sealed.
- Hazardous waste must not be stored near working floor drains and is required to be shipped using an 8 part EPA uniform hazardous waste manifest to a permitted facility.
- Do not mix spent antifreeze with other wastes, gasoline or solvents.
- Do not discharge antifreeze to the sewer, septic systems, or to the environment.
- Keep ethylene glycol and propylene glycol separated to increase recycling value.

The NHDES Environmental Fact-Sheet WMD-HW-4 "*Waste Antifreeze: Management Requirements for Handlers and Transporters*" can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/hw/hw-4.htm.

Asbestos Brake Pads

Asbestos can be found in brake pads of vehicles being serviced. Asbestos is not regulated as a

RCRA hazardous waste, but is regulated under the Clean Air Act, Section 112.40 CFR Part 1910 and as a special waste under New Hampshire Solid Waste Rules. If handled improperly, asbestos can become a very dangerous waste. Asbestosis, a fatal lung disease, may result when asbestos is improperly managed and disposed.

Best Management Practices:

- Asbestos dust from brake pads should be vacuumed off all parts with OSHA & EPA approved equipment before disassembly begins. Vacuum bags should then be double bagged in plastic, or single bagged in plastic and placed in a sealed drum for transportation.
- Asbestos should be transported in closed containers and packed in a manner to prevent tipping, spilling, or breaking during transporting.
- During temporary storage, asbestos dust should be contained and collected in a manner to prevent airborne contamination and human exposure.
- Asbestos brake pads can be disposed of in a landfill. Generally, asbestos will be hand placed and buried separately from other garbage then covered with dirt prior to compacting. However, the local landfill authorities should be contacted.
- Never use compressed air to clean off brake pad linings or backing plates.
- Never grind brake shoes or pads.
- Do not eat, drink, or smoke in an area where brake work is being performed.
- Wear OSHA approved respirator when performing brake work or using a brake lathe.
- Always assume the vehicle you are working on contains asbestos type friction material.
- Use containment equipment when servicing brake assemblies.

The NHDES Fact-Sheet WMD-ASB-2, *“Asbestos: General Information for Handling and Disposal”* can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets.asb/asb-2.htm.



Batteries

Vehicle batteries contain sulfuric acid and are made of 50 percent lead by weight. Recovery of lead from the more than 70 million automotive batteries scrapped annually accounts for nearly 40 percent of the lead produced in the U.S.

In New Hampshire, it is illegal and wasteful to throw away lead-acid batteries. Batteries should be returned for recycling.

Reduction Recommendations:

Proper maintenance can significantly affect the life of a vehicle battery and the likelihood of an engine starting. Maintenance procedures include:

- Monitoring and maintaining battery fluid at the proper level.
- Determining whether the quality of water added to the battery will extend the life of the battery. Some vehicle maintenance professionals believe distilled or deionized water achieves this end.
- Making sure brackets holding the battery are not corroded. Corroded brackets allow the battery to shift resulting in vibration damage.
- Making sure battery connections are clean. A water and baking soda mixture removes corrosion allowing for better current flow.
- Placing a heavy grease or commercial corrosion prevention product on the posts to retard the accumulation of corrosion.
- Store all spent batteries on an acid-resistant surface, under cover, away from flammable liquids, ignition sources, and drains.

The NHDES Environmental Fact-Sheet WMD-SW-4 “*Management of Used Motor Vehicle Batteries*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets.sw/sw-4.htm.

Drums

DES encourages the reuse and recycling of properly prepared 55-gallon steel drums. Since many drums contain, or may have contained hazardous materials that could contaminate groundwater or lead to personnel health and safety concerns, it is imperative that operators of solid waste facilities be informed about the best management practices for collecting and processing drums.

If not properly managed, drums can lead to expensive liabilities for communities or businesses, such as testing, removal, and disposal as well as contaminated soil and groundwater that will also have to be disposed of properly or treated. For example, open drums containing a residual product that is allowed to collect rainwater may overflow and need to be tested and handled as a hazardous waste.

Collection of Drums

Drums collected for reuse or recycling should arrive at the facility empty. This means that all wastes have been removed from the drum by the generator using common practices such as pouring, pumping, and aspirating for liquids (no free liquid can remain).

Collection and reuse of drums that have contained acutely hazardous materials, like pesticides and cyanides, is discouraged as the drums will contain residues of prior materials unless they are “triple rinsed”. In addition, the residue on the bottom of one drum should not be added to the residue of another as this may lead to the mixing of incompatible materials or the accumulation of a hazardous waste mixture.

Reduction Recommendations:

- Try to use a supplier who will accept back empty drums and negotiate with the supplier to use returnable drums and totes to ship materials. Totes are currently used to transport alkaline cleaners, coolants, solvents, adhesives, paints, and inks.
- Empty containers can be sent to scrap metal vendors. However, you may want to consider crushing or cutting the drums and containers to ensure that they are not being reused for storing or transporting other material. Before cutting or crushing drums, determine if the drum contained flammable material. These drums may contain an explosive mixture of air and vapor. Drums should be thoroughly purged before cutting.
- Determine the feasibility of purchasing a drum crusher. Visit your scrap metal vendor to note how scrap is handled. Ask questions on how your scrap is received and processed. Tour the company to monitor how the containers are managed.
- Determine if a drum reclamation company can recondition your drums for resale. Investigate drum reclamation and recycling sites to ensure that your drums are managed responsibly and lawfully. If a drum is legally empty and is sold to a drum reclaimers/recycler, the generator should be exempted from future liability associated with that drum.

Best Management Practices for Drums Being Used or Collected:

- Drums should be empty, with no residual materials inside, outside, or on the top.
- Drums should be structurally sound, without big dents or rust.
- Drums should be located in areas clearly visible to prevent damage from motor vehicles.
- Open head drums should be covered with lids sealed by heavy-duty bolt clamps, snap rings, or bungs.

- Drums should be placed off the ground or on an impermeable surface in a covered containment area to prevent corrosion and discharges to groundwater.
- Drums should be stored away from the eaves of a roof and any heat sources.
- Drums should be located away from wetlands, surface water, wells, property lines, flood zones, and drainage areas.
- Drums should not be covered with other materials where they may become forgotten, knocked over, or develop unseen leaks.
- Drums being used should be labeled and face “out” so as to be easily read, and accessible year round in case of fire, removal, or spills.
- Drums should be regularly inspected for structural integrity (rust, cracks, leaks, etc).

Best Management Practices for Scrap Metal Recycling:

- Empty drums should have the top and bottom removed by the generator before being accepted by the facility to prevent the accumulation of rainwater. A torch should not be used to remove the top or bottom of a drum as the drum may contain a flammable gas and could explode. Mechanical openers are commercially available that should be used to accomplish this task.
- Drums should be clean.
- Drums should be flattened to save space.

The NHDES Environmental Fact-Sheet WMD-SW-29, “*Best Management Practices for 55-Gallon Drums*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/sw/sw-29.htm.

Freon

Refrigerants, or CFC's (chlorofluorocarbons), function to cool air in mobile air conditioning units. However, CFC's are ozone depleters that produce long term environmental damage and are therefore considered to adversely affect human health.

On July 14, 1992, the Environmental Protection Agency published the final rules on servicing air conditioner units under Section 608 of the Clean Air Act. The rule requires that shops that service vehicle air conditioners must have EPA certified equipment and that technicians who service air conditioning units must also be certified by EPA. The rule also restricts the sale of CFC's to certified technicians only.

Although the production of CFC's ceased in 1995, there are no restrictions on the use of the chemicals in existing equipment and certified technicians may legally work on such units. The certification requirements for equipment and technicians covers repairs, CFC removal, recharging existing air conditioners, servicing of any form, and work on all vehicles whether on or off-road.

Reduction Recommendations:

- Use alternative refrigerants, such as HFC R-134a.
- Exercise caution to prevent cross contamination of R-12 with R-134a.

Best Management Practices:

- Insure all motor vehicle air conditioner technicians are certified or send air conditioners to a certified technician.
- Make it a policy to encourage customers to repair rather than “top off” leaking systems. Instead, find the leak and take the corrective measures prior to recharging the system.

Mercury Containing Lamps and Devices

A number of lamps and devices contain mercury, such as fluorescent and HID lamps, thermostats, thermometers, switches, and relays. This mercury poses a severe hazard to human health or the environment when improperly managed.

Waste mercury-containing lamps and devices may not be disposed of as a solid waste unless they are below regulatory limits for mercury when subjected to a toxicity test required by EPA and DES. Many fluorescent and HID lamps, and mercury containing devices, including thermostats, exceed the hazardous waste regulatory limit for mercury toxicity of 0.2 milligrams per liter.

Reduction Recommendations:

- Waste mercury-containing lamps and devices may be handled under DES’s universal waste policy, adopted October 14, 1998. DES believes that recycling is the preferred option and will promote the recycling and proper management of waste mercury-containing lamps and devices.
- Under this policy, hazardous waste generators are not required to include universal wastes in their calculation of generator status. Universal wastes, when recycled, are also not subject to the generator fees. Handlers are not required to use a licensed hazardous waste hauler to transport universal waste and are not required to complete a hazardous waste manifest.
- “Low mercury” lamps still contain mercury and may be rejected by your solid waste facility. Recycle all lamps under Universal Waste Rules regardless of their designation.

The NHDES Fact-Sheet WMD-HW-7, “*Waste Mercury-Containing Lamps: Management Requirements for Handlers and Transporters*” may be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/hw/hw-7.htm.

Scrap Metal

Stainless steel, iron, and chromium plated metals can be found in vehicle maintenance and repair facilities. These metals are usually removed from damaged vehicles or mechanical parts.

Currently, lead soldered metal plates, chromium plated metals and other plating chemicals that can be listed or characteristic hazardous wastes are required to be TCLP tested. Normally, with the exception of lead soldered metal plates, the plated metals listed above pass the TCLP and can be managed as non-hazardous solid wastes.

Reduction Recommendations:

- Scrap metal can be stored outside for long periods with no significant deterioration or loss of value, and many municipalities stockpile scrap metal for a year or more before moving it to a processor.

Best Management Practices:

- If scrap metal contains oil or grease, outside storage may lead to contaminated rain runoff if the metal pile isn’t covered or bermed.
- Consolidate and maintain scrap metal in one designated area.

The NHDES Fact-Sheet WMD-SW-19, “*Scrap Metal Management*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/sw/sw-19.htm.

Storage Tanks

Underground tanks-Env-Wm 1401 requires registration for single or aggregate tanks that are:
>110 gallons of a regulated substance (oil or hazardous waste);
>1,100 gallons of fuel oil.

Aboveground tanks-Env-Wm 1402 requires registration for single or aggregate tanks that are:
>660 gallons of oil combined to greater than 1,320 gallons oil.

The deadline to upgrade any underground storage tank was December 22, 1998. By that date, owners and operators of existing steel UST’s that are not protected from corrosion had to install a cathodic protection system or permanently close the UST.

The NHDES “*Application for the Construction of New and Substantially Modified Underground Storage Facilities*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/orcb/doclist/ustappli.pdf.



*Used Tires**

Disposing of the scrap tires is a big issue. An estimated 249 million tires are scrapped each year in the U.S. Storing tires above ground is a fire hazard, because they are almost impossible to extinguish. They generally cannot be stored without holding water and become ideal breeding grounds for disease carrying mosquitoes.

Tires must be stored in a secured area in piles smaller than 25 feet in diameter and 15 feet in height. All tire piles must be bermed so as to contain any molten byproducts generated by a fire.

Tires may be disposed of only after being shredded or if they are shipped to a facility which is designed to accept whole tires.

Reduction Recommendation:

- Used tires can be recapped and used again. Research tire retreading companies.
- Used tires are an excellent form of energy. Pound for pound, there is more energy in tires than in oil. The Oxford Energy plant presently burns tires for energy and accepts tires for this. See if there is a common carrier who collects tires for energy recovery.

Best Management Practices:

- Accept old tires from customers.
- Use a removal contractor and/or shipping facility to process the tires for use as fuel or feedstock for a recycled product such as rubberized asphalt.

The NHDES Environmental Fact-Sheet WMD-SW-22, “*Scrap Tire Management*” can be obtained by calling (603) 271-2975 or by visiting www.des.state.nh.us/factsheets/sw/sw-22.htm.

Appendix A:
NH Resources for Information & Assistance

New Hampshire Resources for Information & Assistance

New Hampshire Pollution Prevention Program

New Hampshire Department of Environmental Services

Waste Management Bureau

6 Hazen Drive

Concord, NH 03301

In State: 1(800) 273-9469

Phone: (603) 271-6460

Fax: (603) 271-2456

E-mail: nhppp@des.state.nh.us

Website: <http://www.des.state.nh.us/nhppp>

Provides confidential, non-regulatory multi-media waste reduction assistance for businesses, maintains an in-house pollution prevention technology library, and serves as a clearinghouse for researching waste reduction information.

Stephanie D'Agostino, M.S., CPM

Pollution Prevention Coordinator

Project Leader: N.H. Environmental Legislation, Mercury Task Force Co-Chair, and
Commissioner Liaison

Phone: (603) 271-6398

sdagostino@des.state.nh.us

Assists in the integration of Pollution Prevention concepts into Departmental functions and assists in overall coordination of the Department's pollution prevention efforts.

Sara J. Johnson, M.S.

Pollution Prevention Program Manager

Project Leader: P2 and Enforcement, P2 Conference, Mercury Reduction in Healthcare

Phone: (603) 271-6460

sjohnson@des.state.nh.us

Jennifer L. Drociak, B.S.

Pollution Prevention Specialist I

Project Leader: Governor's Award for Pollution Prevention, NH Marina Project, Wastelines,
NHPPP web page

Phone: (603) 271-0878

jdrociak@des.state.nh.us

Lin K. Hill, M.S.

Pollution Prevention Technician II

Project Leader: PrintSteps, Technical Assistance, On-Site Assessments

Phone: (603) 271-2902

lhill@des.state.nh.us

Small Business Technical Assistance Program

New Hampshire Department of Environmental Services

Air Resources Division

6 Hazen Drive

Concord, NH 03301

Rudy Cartier (Ombudsman)

In State: 1(800) 837-0656

Phone: (603) 271-1379

Fax: (603) 271-1381

rcartier@des.state.nh.us or stap@des.state.nh.us

Clean Air Act compliance and technical assistance. Features Small Business Ombudsman, regulatory research, site visits, and permitting assistance.

New Hampshire Source Reduction and Recycling Program

New Hampshire Department of Environmental Services

Waste Management Bureau

6 Hazen Drive

Concord, NH 03301

Mark Morgan

Phone: (603) 271-3712

Fax: (603) 271-2456

mmorgan@des.state.nh.us

Webpage: <http://www.des.state.nh.us/pcas/>

Assistance for municipalities for solid waste reduction and recycling. Features solid waste tracking policy information and workshops.

OSHA Consultation Program

New Hampshire Department of Health and Human Services

6 Hazen Drive

Concord, NH 03301

Theresa Ferrara/Brenda Clark

Phone: (603) 271-4676

Fax: (603) 271-2667

E-mail: tferrara@dhhs.state.nh.us bclark@dhhs@state.nh.us

Website: <http://www.dhhs.state.nh.us/>

Provides free assistance for business with less than 150 employees. Helps businesses determine/correct workplace hazards and works to create programs to ensure a safe and healthy workplace.

WasteCap Resource Conservation Network (ReCoN) of New Hampshire

122 N. Main Street
Concord, NH 03301

Barbara Bernstein

Phone: (603) 224-5388

Fax: (603) 224-2872

E-mail: recoinfo@wastecapnh.org

Website: <http://www.wastecapnh.org>

Helps businesses save money and conserve natural resources by providing free, confidential assistance in reducing solid waste, conserving energy and water, and preventing pollution.

New Hampshire Automobile Dealers Association

507 South Street
Concord, NH 03302

Brenden Perry

Phone: (603) 224-2369

Fax: (603) 225-4895

E-mail: nhada@tiac.net

Website: <http://www.nhada.com/>

New Hampshire Municipal Association

25 Triangle Park Drive
Concord, NH 03301

Ken Ward

Phone: 1-800-646-2758

Webpage: <http://www.nhmunicipal.org/>

New Hampshire Industrial Pre-Treatment Program

New Hampshire Department of Environmental Services
6 Hazen Drive
Concord, NH 03301

George Carlson

Phone: (603) 271-2052

Fax: (603) 271-4128

E-mail: gcarlson@des.state.nh.us

Wastewater and water pollution assistance program for businesses. Features regulatory and pollution prevention assistance and site visits.

New Hampshire Department of Environmental Services

- Hazardous Waste Compliance (603) 271-2942
- Solid Waste Compliance (603) 271-2925
- Special Investigation Section (603) 271-3899
- Water Division (603) 271-3503
- Air Resources Division (603) 271-1370
- Public Information & Permitting Unit (603) 271-2975
- **Additional Resources:**

- New Hampshire Department of Health & Human Services (603) 271-4688
- Governor's Office of Energy and Community Services (603) 271-2611
- New Hampshire Office of State Planning (603) 271-2155

Additional Web Site Links:

www.ccar-greenlink.org/

Helping automotive professionals protect the environment

U.S. Environmental Protection Agency
Office of Transportation and Air Quality

<http://www.epa.gov/omswww/>

Protecting public health and the environment by controlling air pollution from motor vehicles, fuels, and nonroad equipment, and by encouraging travel choices that minimize emissions.